courage to try breeding from it. I took the second *fowleri* from the same locality in August 1972, and having by then gained experienced in breeding *coridon,* had no hesitation in risking spoiling the specimen (which was in very good condition) by putting it in my breeding cage. After two days it had layed 24 ova, and as it was still in good condition, I kept it for my collection (fig. 3). From these ova there was a good hatch in the spring of 1973, and in May I counted 16 larvae. A further count in mid June however, revealed only five healthy larvae, and two that had been "spun up" by a spider. The spider was removed, and the five larvae duly pupated. In due course I had an F1 generation of one male and four females, all of which were typical. From these I obtained a pairing, and about 60 fertile ova resulted.

The F2 generation in 1974 produced 14 typical males, six ab. *ultrafowleri* B. & L. males (fig. 4), 11 typical females and four ab. *fowleri* females. Most of the butterflies of this brood were below average size. The result of this breeding experiment is about what one would expect in an aberration inherited as a simple recessive.

From these I managed to obtain a pairing between one of the male *ultrafowleri* and a *semisyngrapha* female, and with some luck this should produce some interesting results in 1976.

Notes on Breeding the Ringlet: *Aphantopus hyperantus* (Linn.) ab. *pallens* Schultz and ab. *lanceolata* Shipp

By Richard Revels*

On 13th July, 1972 I had the good fortune to capture in Monks Wood, Hunts., a perfect male specimen of the very rare "Golden Albino" (ab. *pallens* Schultz) of *A. hyperantus* (L.). I took it home alive, and that evening photographed it while it was feeding (in the house) on the flowers of thistle and knapweed. A typical female *hyperantus* had emerged that day from several larvae I had found on the Chilterns in June, and having decided it would be worth an attempt at a pairing, next morning I put them in a wooden box covered with netting and containing flowers in two jam jars. An inspection at 10 a.m. revealed a pairing, and an hour later when they had parted, the *pallens,* still in perfect condtion, was removed for my collection. The female laid about 70 ova during the following week. They were not attached to anything, but presumably just dropped while flying about in the cage, and I collected them up each evening by touching them with a damp paint brush to which they readily adhered.

Having never before bred this species from ova, I was relieved to find that this is one of the more easy species to rear. The ova were split into two lots: one lot being placed on

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growing *Poa annua* in an out-door breeding cage sheltered from the direct rain; the other ova were put on grass, growing in a netted-over plastic tub kept out-of-doors and exposed to all weathers. There did not seem to be any difference in the survival rate of the larvae from these two methods of over-wintering.

The larvae fed up slowly during the autumn and milder periods of the winter, and were about $\frac{3}{8}$ of an inch long by the time they started feeding in earnest at the end of March, and by the end of May were full grown. A number of the larvae was noted lying on their sides on top of the ground among the grass with no kind of cocoon or protection at all, and which after a week turned to pupae.

The resulting F1 generation consisted of about 30 specimens, all typical and rather below average size. I put about ten of each sex in a breeding cage. One pairing was seen, and others may have taken place, but of the 200-250 ova laid, only about half hatched. I split the young larvae into four groups so that if disease should strike, there would be a better chance of saving at least some of them. All went well during the winter and spring and, in July 1974, the resulting F2 generation consisted of 80 typical examples and eight ab. *pallens*. Most of these specimens were rather small, and a number were crippled, including two *pallens*.

From the foregoing I think *pallens* is probably inherited as a simple recessive, but with the ab. gene weakening the strain and being sometimes lethal. If that be so, it would explain the small size of most of the specimens, and the fact that only about 10% *pallens* hatched instead of the expected 25%.

I attempted a pairing between two of the *pallens*, but no mating was seen, and of the few ova laid, none hatched. I also put two of the *pallens* females with three male *lanceolata* Shipp (which I had also been breeding), but again no pairings were seen, and what ova were laid, collapsed.

The ab. *lanceolata* stock (fig. 5) referred to above, was given to me as ova in July 1972 by the late Major A. E. Collier. Although ab. *lanceolata* has already been bred by a number of collectors, my results may nevertheless be of interest. The F1 generation consisted of about 40 specimens, all of which were typical and of normal size. Several of each sex were put into a breeding cage, and pairings were seen and about 400 ova were laid. After giving away to friends a number of the ova and larvae, I had left in the spring of 1974 about 180 larvae. These were divided into groups of 25-30, some being put on grass growing in pots and netted over, while others were put in an out-door wooden cage, in which were placed clumps of growing grass.

By the end of June, the F2 generation had started to hatch, and finally consisted of 112 typical examples and 38 *lanceolata*, which is exactly the 25% result expected in a simple recessive

aberration. There was considerable variation between individuals. Also, some of the females had most of the rings lanceolated, whereas the males were less extreme with often only a few rings affected.

I have now changed from using *Poa annua* as a foodplant when breeding Satyridae species, as I find this is very prone to heavy infestations of aphis and often dies off during the winter due to mildew. I now use a small creeping grass that grows in my garden up corners and around the edges of the lawn, etc. I do not know as yet what species of grass this is, but it has none of the above-mentioned disadvantages and is readily eaten by the larvae.

Silpha carinata Herbst — a Remarkable Re-discovery in the British Coleoptera

By David R. Nash*

On 18th April,, 1974, whilst sieving through a heap of damp straw on the edge of a wooded area in Wiltshire, some 20 km. from Salisbury, I discovered a single example of a black Silphid which when first observed on the collecting sheet I immediately assumed to be *Silpha tristis* Illiger. On tubing the insect, however, I saw that it did not agree with any British Silphid known to me. A careful search under stones and pieces of wood in the surrounding area failed to reveal any further specimens.

Upon returning home, I was able to run the insect down quite easily in both Reitter (1909), and Freude, Harde and Lohse (1971) to *Silpha carinata* Herbst—a determination subsequently confirmed by Mr A. A. Allen, who suggested that the species might possibly be mixed with, or standing as, *S. tristis* in one or two collections.

According to Freude, Harde and Lohse (*loc. cit.*), the distribution of *S. carinata* extends from mid-France through to Mongolia—in middle Europe it is apparently widely distributed but usually rare. Reitter (*loc. cit.*), although likewise stating that *carinata* is a rare insect, links it with mountain regions, but evidence from other authorities does not seem to indicate that it is a peculiary montane insect. For example, Hansen (1968)—who provides an excellent figure of the beetle—notes that it is widespread but fairly rare in all the three main distribution areas of Denmark (*not* a mountainous country).

The three British species of *Silpha* on our present list are readily separated into two groups by means of the longitudinal keeling of the elytra, *tristis* being the only species possessing three very distinct equally raised keels, whilst *tyrolensis* Laicharting and *obscura* Linnaeus have three less distinct keels of which the outermost is clearly the strongest. Since *carinata* has three very distinct keels on each elytron, the only species with which it may be confused is *tristis*. The following table

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